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ABSTRACT

This study aimed to examine the psychological adaptation of international and migrant students in light of various individual variables including social self-efficacy, locus of control, age, sex, generational status, acculturating group membership, length of residence in the host society, and acculturation strategy. Participants were 197 university students attending a university in Ontario, Canada. There were 90 Anglo-Celtic Canadians, 35 second generation migrants, 40 first generation migrants, and 32 international students. The results indicated that the Anglo-Celt Canadians endorsed chance locus of control less than the first generation migrants, and the international students reported lower social self-efficacy than the Anglo-Celtic Canadians and second generation migrants. High academic satisfaction was predicted by a locus of control of weak belief in powerful others and high social self-efficacy. Low psychological distress was predicted by high social self-efficacy and weak belief in chance locus of control. Among first generation migrants and international students, there was a relationship between degree of Canadian identification, importance of being a Canadian, and social self-efficacy. Among the international students, the older students were more satisfied with their academic work but reported higher levels of stress than the younger ones. The implications of these findings for providing services to students are discussed. (Contains 5 tables and 28 references.) (Author/SLD)

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The psychological adaptation of international and migrant students in Canada

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This study was completed while the first author was a visiting scholar at Queen's University, Kingston, Ontario, Canada.

Keywords: migrant adaptation, adolescent mental health, social competence.

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Abstract

This study aimed to examine the psychological adaptation of international and migrant students, in the light of various individual variables including social self-efficacy, locus of control, age, sex, generational status, acculturating group membership, length of residence in host society and acculturation strategy. Participants were 197 university students attending a university in Ontario, Canada. There were 90 Anglo-Celtic Canadians, 35 second generation migrants, 40 first generation migrants and 32 international students. The results indicated that the Anglo-Celtic Canadians endorsed chance locus of control less than the first generation migrants, and the international students reported lower social self-efficacy than the Anglo-Celtic Canadians and second generation migrants. High academic satisfaction was predicted by weak belief in powerful others locus of control and high social self-efficacy. Low psychological distress was predicted by high social self-efficacy and weak belief in chance locus of control. Among first generation migrants and international students, there was a relationship between degree of Canadian identification, importance of being a Canadian, and social self-efficacy. Among the international students, the older students were more satisfied with their academic work but reported higher level of stress than the younger ones. The implications of the above for service provisions to students were also discussed.

The psychological adaptation of international and migrant students in Canada

Psychologists have been increasingly interested in the adaptation of migrants and sojourners in the receiving society, as migration and working/studying overseas are becoming more and more common. Adaptation, according to Berry (1997), is related to the changes that individuals or groups make as a response to demands in the environment. Searle and Ward (1990) argue that adaptation should be divided into two domains, namely, the internal psychological (emotional and affective) domain and the external sociocultural (behavioral) domain, though the two are related to each other. The internal psychological domain is often measured in terms of levels of psychological distress and/or levels of psychological satisfaction. In the case of migrant and international students, the perceived ability to deal with school, or academic satisfaction, is also an important aspect of their psychological satisfaction as they spend most of their time in school, and for international students, academic pursuit is often the main reason for moving to the new receiving society. The external sociocultural domain is often measured in terms of ability to deal with everyday life such as family, and work. In this study, the main focus is on the psychological adaptation (psychological distress and academic satisfaction) of international and migrant students, in comparison to non-migrant students. Such a comparison would throw light on factors which are specific to the adaptation of migrant students and factors which are common to the adaptation of all students.

Berry (1997) presented a conceptual framework to illustrate the main issues related to migrant and sojourner adaptation. According to this framework, both group or societal variables and individual variables should be considered. In terms of group or

societal variables, the political, social, economic and demographic characteristics of the society of origin as well as the society of settlement and the relative degree of voluntariness of migration are important factors related to migrant adaptation. Apart from societal or group variables, individual variables are also important in the study of migrant and sojourner adaptation and these variables include variables existing prior to acculturation and variables arising during acculturation. The former include variables such as age, sex, type of acculturating group, migration motivation, expectations, cultural distance, personality variables such as locus of control, and self-efficacy whereas the latter include variables such as length of time in the receiving society, coping strategies, social support, societal attitudes and identification with the receiving society. Acculturation begins with cultural groups in contact, resulting in changes in the groups' collective features such as political, economic and social structures. These changes in turn affect the individual who is experiencing acculturation, (termed "psychological acculturation"), leading to various psychological experiences and changes, eventually leading to an individual's adaptation. The nature of a person's psychological acculturation and adaptation are dependent on both these group level factors and individual factors.

Berry (1997) points out that no single study has incorporated all aspects of this framework. The present study is no exception. Since the focus of the study is on the psychological adaptation of migrant and sojourner students, various factors which have been shown in past research to be especially relevant to their psychological adaptation (i.e. psychological distress and academic satisfaction) are selected to be included in the study.

Among the individual variables existing prior to acculturation, self efficacy is often regarded as one of the important variables related to psychological adaptation. Self-efficacy can be defined as the belief that one can successfully carry out the behavior required to produce a particular outcome (Bandura, 1977). Self-efficacy has been found to be related to adjustment among college students (Solberg, O'Brien, Villareal, Kennel, & Davis, 1993, Ward & Kennedy, 1994), and high school students (Bandura Barbaranelli, Caprara & Pastorelli, 1996). A low sense of self efficacy has been found to be associated with depression, anxiety and helplessness whereas a strong sense of self efficacy is related to good health, high achievement and social participation (Schwarzer, Hahn & Jerusalem, 1993). Among migrants, Schwarzer, Hahn and Schroder (1994) found that a sense of efficacy was related to better adaptation among East German migrants in West Germany.

Self-efficacy is also considered to be domain specific and one can have different beliefs in various domains of functioning (Schwarzer, Bäßler, Kwiatek, Schroder & Zheng, 1997). Within the social domain, social self-efficacy can be regarded as a person's expectancy that he or she can successfully perform or complete a target behavior in an academic or everyday situation involving social interaction. Bandura et al. (1996) found that social self-efficacy was related to the psychological well-being of high school students. Perceived social inefficacy to initiate and maintain satisfactory supportive relationships makes one more vulnerable to depression through social isolation. Bandura et al. (1996) also point out that social self efficacy is related to performance in the academic setting as successful interactions with peers, academic faculty members, and

general staff members are also thought to be related to mastery of academic work (Bandura et al., 1996).

The construct of social self-efficacy is especially relevant to international students and migrants as they often experience considerable initial difficulties associated with their lives in the new country. Some of the common difficulties are separation from family or extended family in the home country, homesickness, adjustment to social customs and norms, difficulties in making friends with students from the receiving society and social isolation (Thomas & Althen, 1989). Fan and Mak (1998) found that first generation migrant students reported more social anxiety and lower social self-efficacy than second generation migrant students in Australia. Though it is likely that migrant and international students might experience a lower sense of social self-efficacy than non-migrant students, few studies have examined the relationship between social self-efficacy and psychological adaptation among migrants and international students.

Bandura (1999) pointed out that self-efficacy expectations could influence people's explanations of success and failure. People with high self efficacy explain success and failure in terms of internal controllable factors such as effort and strategies. Salili (1996) claimed that students' beliefs about the causes of success and failure were important mediators of learning and achievement behavior. Students who believed that future academic success was within their own personal (internal) control were likely to try harder and perform better than those who believed that success was outside their control who were less likely to try hard and perform. Walden and Ramey (1983) and Willig, Harnisch, Hill and Maher (1983) found that attribution of success to internal controllable factors such as effort was correlated with relatively high academic achievement. Ward

and Kennedy (1992) found that an internal locus of control was related to psychological well-being among sojourner students. Yan and Gaier (1994) found that American university students attributed their academic achievement more to internal factors such as ability than their Chinese, Japanese, Korean and Southeast Asian counterparts.

Another individual variable existing prior to acculturation that is related to adaptation is gender. It has been found that migrant girls in general reported more problems in adaptation, including parent-child conflict and depressive tendencies, than boys (Sam & Berry, 1995; Rosenthal, 1984). Crystal, Chen, Fuglini, et al. (1994) found that high school girls from USA, Japan, and Taiwan reported more maladjustment, including stress and depression, than their male peers. Another personal variable existing prior to acculturation that is thought to be related to adaptation is age. In this respect, older migrant youth have been found to experience more problems than younger ones (Sam & Berry, 1995).

The type of acculturating group that one is a member of could also be related to adaptation. For example, Zheng and Berry (1991) found that Chinese visiting scholars and international students in Canada reported more difficulties in the social area such as making friends, and reported more homesickness, loneliness, and communication problems, compared to Chinese-Canadian migrant students and non-Chinese Canadian students. However, the Chinese visiting scholars and visa students reported less difficulties with academic performance than the Chinese-Canadian migrant students and non-Chinese Canadian students. Similarly, Volet and Renshaw (1996) reported that in Australia, overseas students who were proficient in English performed better than local students. Another issue related to type of acculturating group is one's generational status

(first generation migrants who are born overseas or second generation migrants who are born in the receiving society). Though Sands and Berry (1993) found that generational status was not related to adaptation variables such as mental health status, Fan and Mak (1998) found that first generation migrant students reported higher social anxiety and lower social self efficacy than second generation migrant students in Australia.

In terms of variables arising during acculturation, length of time in receiving society is an important variable and it has been found to be positively related to academic performance among Chinese migrant high school students in Australia (Fan, 1996). Stress has been found to be higher in the initial period of settlement among migrants international students (Fan, 1996). Another variable arising during acculturation is identification with the receiving society. According to Ward (1996), identification with the receiving society has been found to be related to decreased levels of adaptation problems. Ward and Kennedy (1993) found that identification with the receiving society was negatively associated with mood disturbance.

The present study aimed to examine the adaptation of international and migrant students in Canada, in comparison to non-migrant students, in relation to the individual variables discussed above, using the framework of Berry (1997). The individual variables included social self-efficacy, locus of control, age, sex, generational status, acculturating group membership, length of time in receiving society and cultural identity. The adaptation outcome variables included academic satisfaction and psychological distress (stress). The hypotheses were:

1. Academic satisfaction is positively related to social self efficacy and length of time in receiving society and negatively related to external locus of control

2. Psychological distress is positively related to external locus of control and age and negatively related to social self efficacy, length of time in receiving society and identification with receiving society.
3. T' re is an acculturating group membership difference in social self-efficacy, locus of control, psychological distress and academic satisfaction. It is expected that international students will report higher distress levels and academic satisfaction than migrant and non-migrant students. It is expected that migrant and international students will report lower social self-efficacy than non-migrant students. Migrant and international students will endorse external locus of control more than Anglo-Canadian students.
4. There is a sex difference in psychological distress. It is expected that females will report higher distress levels than males.

Method

Participants

The participants were 197 university students attending a university in Ontario, Canada. The participants could be classified into four groups. The first group consisted of 90 Anglo-Celtic Can dians. These participants were born in Canada and their parents were born in Canada or other English-speaking countries such as United Kingdom, United States of America or Ireland. The second group consisted of 35 second generation migrants. These participants were born in Canada and at least one of the parents of these participants were born overseas in a non-English-speaking country. The third group consisted of 40 first generation migrants who were born overseas with one or both parents born overseas in a non-English speaking country. The fourth group consisted of 32

international students. These students and their parents were born overseas in non-English-speaking countries. Two international students did not supply information on country of birth.. The mean length of time in Canada, and the mean ages of the participants are shown in Table 1.

Insert Table 1 here

Materials

The materials consisted of a questionnaire which included four scales and a section on demographic information. The four scales included the Social Self-Efficacy Scale for Students (SSESS) (Fan & Mak, 1998), the Internal, Powerful Others and Chance Scale (Levenson, 1981), Perceived Stress Scale (Cohen, Kamarck & Mermelstein, 1983) and a scale on academic satisfaction.

Social self efficacy was measured by the SSESS scale which consisted of 20 items and was developed by combining the Social Subscale (8 items) of the College Self-Efficacy Instrument (Solberg et al., 1993) and the Social Subscale (4 out of 6 items) of the Self-Efficacy Scale (Sherer et al., 1982). It included items related to confidence in interaction with professors, classmates and participation in classroom activities, handling oneself in social situations and making friends, and intercultural issues such as having common interest with local people and confidence in language skills. Twelve of the items were negatively worded and these items were reverse scored. Participants were requested to indicate their degree of agreement with each item on a 7-point Likert-type scale (1 - strongly disagree, 7 - strongly agree). Total SSESS scores were obtained by summing up the scores for all the items after the appropriate reverse scoring, with a high score indicating high social self-efficacy. The reliability estimate (Cronbach Alpha) of

the scale based on 227 Australian students was .85 and test-retest reliability over a five-week interval was .85. For validity, the scale correlated significantly with social anxiety and was able to differentiate between first and second generation migrant students in Australia (Fan & Mak, 1998).

Locus of control was measured by the Internal, Powerful Others and Chance Scale (Levenson, 1981) which consisted of 24 statements. Participants were requested to indicate their degree of agreement with each statement on a 7-point Likert scale from -3 (strongly disagree) to +3 (strongly agree). The scale could be sub-divided into three locus of control (LOC) subscales with each subscale consisting of 8 items. The Internal Subscale (Internal LOC) measured "the extent to which people believe that they have control over their own lives" (Levenson, 1981, p. 17). The Powerful Others Subscale (Powerful Others LOC) measured the belief in the control and influence of powerful others. The Chance Subscale (Chance LOC) measured the belief in chance control. The scores of each subscale were summed up and a constant of 24 was added to each of the subscale totals so as to eliminate negative scores. A high score for each subscale indicated strong belief in the locus of control as measured on the respective subscale. For internal consistency, the Kuder-Richardson reliabilities were .64, .77 and .78 for the Internal, Powerful Others and Chance LOCs (Levenson, 1981). Test-retest reliability over a 7-week interval ranged from .62 to .73 (Levenson, 1981). For validity, the Powerful Others LOC and Chance LOC correlated positively and the Internal LOC correlated negatively with the Rotter's I-E Scale (Levenson, 1981), another measure of locus of control.

Academic satisfaction was measured by the Academic Satisfaction Scale which consisted of 7 statements on satisfaction with university life and subjective rating of own academic performance. The participants rated these statements on a five-point scale (1- strongly disagree, 5 - strongly agree). Five of the statements were negatively worded and these statements were reverse scored. The scores were summed up and a high score indicated high academic satisfaction

Psychological distress was measured by the Perceived Stress Scale (Cohen et al., 1983) which consisted of 14 items measuring the degree to which situations in one's life were perceived as causing psychological distress and participants rated the frequency of the situations on a 5 point scale (0 = never, 4 = very often). An example is "in the last month, how often have you been upset because of something that happened unexpectedly?". Seven of these items were positively worded and they were reverse scored. The scores of the 14 items were summed to form a total score, with a high score indicating high distress. The internal consistency (Cronbach Alpha) of the scale was between .84 to .86. In terms of validity, the scale correlated positively with number of stressful events and social anxiety (Cohen et al., 1983).

Participants were also requested to respond to questionnaire items on demographic information, including sex, country of birth, language spoken at home, course studied, length of stay in Canada, and residential status (landed immigrant or overseas students). Participants were also requested to indicate their degree of cultural identity: Canadian identification and identification with an ethnic group (if any) were assessed on a five point scale (1 - not at all, 5 - very much). They were also asked to

indicate the importance of being a Canadian and being a member of an ethnic group on a five-point scale (1 - not at all important, 5 - very important).

Procedures

The majority of the participants (90 Anglo-Celtic Canadians, 32 second generation migrants, 22 first generation migrants and 2 international students) participated in the research as part of their courses where they could earn credit for participation. These participants completed the questionnaires in group situations outside class hours. The rest (3 second generation migrants, 18 first generation migrants and 30 international students) were requested by the first author to participate while they were reading or having lunch in the lounge of the International Center of the university. These participants completed the questionnaires individually.

Results

The reliability estimates (Cronbach Alpha) of the Internal LOC, Chance LOC, Others LOC, Social Self-Efficacy Scale for Students, Academic Satisfaction Scale and Perceived Stress Scale were .56, .72, .73, .86, .70 and .85 respectively. Since the reliability estimate of Internal LOC was less than the required .7, this variable was excluded from further analysis. The means and standard deviations of the scores of the various scales were listed in Table 2. Homogeneity of variance test (Box's M test) indicated that there was no difference in variance due to acculturating group/generational status (Anglo-Celtic Canadians, second generation migrants, first generation migrants and overseas students) and so scores were not standardized.

Insert Table 2 here

To find out whether the different groups of participants differ in terms of the above variables, a Multivariate Analysis of Covariance (MANCOVA) was performed. The independent variables were acculturating group membership/generational status with four levels (Anglo-Celtic Canadians, second generation migrants, first generation migrants and international students) and sex with two levels (male and female). The dependent variables were chance LOC, others LOC, social self-efficacy, academic satisfaction and psychological distress. Since the first generation migrants and international students were older in age compared to the Anglo-Celtic Canadians and second generation migrants, age was used as a covariate. The results indicated that there were significant acculturating group membership/generational status differences among the variables, F (15, 558)= 2.73, $p < .001$. Univariate F tests indicated that the participants differed in terms of chance LOC, social self-efficacy, academic satisfaction and psychological distress. One-way analyses of variance (ANOVA) with post hoc tests (Scheffe test) were performed to find out the differences among groups (see Table 1 for group means). For chance LOC, the results indicated that the Anglo-Celtic Canadians endorsed chance LOC less than the first generation migrants. For social self-efficacy, the results indicated that the international students reported lower social self-efficacy than the Anglo-Celtic Canadians and second generation migrants. There were no other group differences. The effect of the covariate age was not significant, F (5,184) = 1.56, $p > .05$. The results indicated that the effect of sex was not significant F (5,184) = .85, $p > .05$. There was no significant interaction effect between sex and acculturating group membership/generation status, F (15, 558) = 1.32, $p > .05$.

To investigate the relationship among variables, correlational analysis was used. The results are shown in Table 3. The individual variables, locus of control and social self-efficacy, were related to the two adaptation outcome variables, academic satisfaction and psychological distress. Furthermore, the two adaptation outcome variables, academic satisfaction and distress, were related to each other.

Insert Table 3 here

To find out the predictors to academic satisfaction common to international, migrant and non-migrant students, a multiple regression analysis was performed. The dependent variable was academic satisfaction and the independent variables were chance LOC, others LOC, social self-efficacy, and three dummy variables indicating acculturating group membership/generation status. The dummy variables were residential status (international students versus citizen/landed migrants), place of birth of parents (Canada/English-speaking countries versus overseas non-English speaking countries) and place of birth of participants (being born in Canada versus being born overseas). The results were significant, F (6, 190) = 8.49, $p < .001$. Altogether, 21% (19% adjusted) of the variance was accounted for by the independent variables. The significant predictors were others LOC and social self-efficacy. High academic satisfaction was predicted by weak belief in others LOC and high social self-efficacy. The results are shown in Table 4.

Insert Table 4 here

To find out the predictors to psychological distress common to international, migrant and non-migrant students, a multiple regression analysis was performed. The dependent variable was psychological distress and the independent variables were chance LOC, others LOC, social self-efficacy, and the three dummy variables residential status,

place of birth of parents, and place of birth of participants. The results were significant, F (6,190) = 13.85, $p < .001$. Altogether, 30% (28% adjusted) of the variance was accounted for by the independent variables. The significant predictors were chance LOC and social self-efficacy. Low distress was predicted by high social self-efficacy, and weak belief in chance LOC. The results are shown in Table 4[1].

Four more multiple regression analyses were performed, with the participants being divided into two groups by place of birth, with Anglo-Celtic Canadians and second generation migrants (born in Canada) forming one group and first generation migrants and international students (born outside Canada) forming another group. The latter group would have been exposed, to various extent, to another culture. The dependent variables were academic satisfaction and psychological distress and the independent variables were chance LOC, others LOC, and social self-efficacy. For psychological distress, both results were significant, F (3,121) = 21.11, $p < .001$, for those born in Canada, and F (3,68) = 5.93, $p = .001$, for those born outside Canada. The results indicated that both for participants born outside and in Canada, chance LOC was a significant predictor ($\beta = .30$, $p < .001$ for those born in Canada, $\beta = .29$, $p < .05$ for those born outside Canada). However, social self-efficacy was only a significant predictor for distress for those born in Canada ($\beta = -.31$, $p < .001$). For academic satisfaction, both results were significant, F (3,121) = 5.87, $p = .001$ for those born in Canada, and F (3,68) = 8.47, $p < .001$ for those born outside Canada. For those born outside Canada, social self-efficacy ($\beta = .27$, $p < .05$) and others LOC ($\beta = -.28$, $p < .05$) were both significant predictors. For those born

[1] Results of hierarchical regression (with dummy variables entered first as a block) were the same.

in Canada, none of the independent variables significantly predicted academic satisfaction. Social self-efficacy predicted academic satisfaction for those born outside Canada and it predicted distress for those born in Canada.

The variable length of time in Canada was not included in the multiple regression analyses because of its high correlation (r = .88) with place of birth of participants. According to Tabachnick and Fidell (1989), variables with correlations above .7 should not be included in the same multivariate analysis. Length of time in Canada, however, was not significantly related to academic satisfaction and psychological distress, when the four acculturating groups were analyzed separately. The two variables measuring Canadian identification, degree of Canadian identification and importance of being a Canadian, were not included in the multiple regression analyses because of the high correlations (r = .78 and .60) between degree of Canadian identification and place of birth of participants. Degree of Canadian identification was also highly correlated with importance of being a Canadian (r = .77). Degree of Canadian identification and importance of being a Canadian, however, were not significantly related to psychological distress or academic satisfaction, when the four acculturating group were analyzed separately.

To investigate the structure of the relationships among cultural identity (degree of Canadian identification, importance of being a Canadian) and age, locus of control, social self-efficacy, academic satisfaction and psychological distress, two factor analyses (principal components with varimax rotation) were performed[2]. In each case, two factors were specified to examine whether the variables could be categorized into those existing

prior to acculturation and those arising during acculturation, as a matter of logic and potential application. The first factor analysis involved the first generation migrants and the international students (both born outside Canada) and the second analysis involved the Anglo-Canadian participants and second generation migrants (both born inside Canada). Among the first generation migrants and international students, the two factors (both with eigen values above 1) accounted for 58% of variance. Factor 1 (35.5% of variance) consisted of three of the individual variables existing prior to acculturation (chance LOC, others LOC and age) and the adaptation outcome variables, academic satisfaction and psychological distress. Factor 2 (22.5% of variance) consisted of two variables arising during acculturation (degree of Canadian identification, importance of being a Canadian) and social self-efficacy. Among the Anglo-Canadian and second generation participants, the two factors (both with eigen values above 1), accounted for 53.5% of variance. Factor 1 (34.8% of variance) consisted of five variables chance LOC, others LOC, social self-efficacy, academic satisfaction and psychological distress. Factor 2 (18.7% of variance) consisted of three variables, degree of Canadian identification, importance of being a Canadian and age. The factor loadings are shown in Table 5.

Insert Table 5 here

Among the international students, age was related to academic satisfaction (r = .44, $p < .05$, n = 32) and psychological distress (r = -.51, $p < .005$, n = 32), but age was not related to any adaptation outcome variables among any of the other groups of participants. Among the international students, the older students were more satisfied with their academic work but reported higher level of distress than the younger ones.

[2] Length of time in Canada was not included in the factor analysis as it was identical with age for Anglo-

Discussion

With respect to the relationship between psychological adaptation and individual variables, for academic satisfaction, the positive aspect of psychological adaptation, it was found to be positively related to social self efficacy and negatively related to others LOC. For psychological distress, the negative aspect of psychological adaptation, it was found to be positively related to chance LOC and negatively related to social self efficacy. In both cases, the demographic variables, such as country of birth of participants and their parents and residential status, were not significant predictors. In other words, psychological adaptation was predicted by personality variables. Social self efficacy was predictive of both the positive and negative aspects of psychological adaptation. The results are consistent with the argument of Bandura et al. (1996) who maintained that social self efficacy was related to academic performance and psychological depression.

In terms of acculturating group/generational status differences, the results indicated that there were significant group differences. Specifically, Anglo-Canadians endorsed chance LOC less than first generation migrant students. Anglo-Canadian students and second generation migrant students reported higher social self efficacy than international students. Age as a covariate was not related to locus of control, social self efficacy, psychological distress or academic satisfaction. There was no significant difference in any variables between Anglo-Canadians and second generation migrants. There was no significant difference in any variables between first generation migrants and international students. However, first generation migrants and international students differed from Anglo-Canadians in various effects. The first generation migrants and

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Canadians.

international students were born outside Canada and had various degrees of experience with another culture. The second generation migrants and Anglo-Canadians were born in Canada and might have limited or no close contact with another culture.

When the participants were separated into two groups for analysis, regression results again indicated that the patterns of relationship among variables were different for those born in and outside Canada. For those born outside Canada (first generation migrant and international students), psychological distress was related to chance LOC and academic satisfaction was related to social self efficacy and others LOC. For those born in Canada (Anglo-Canadians and second generation migrants), psychological distress was related to chance LOC and social self efficacy but academic satisfaction was not related to any of the predictor variables. The results suggests that chance LOC is a predictor to psychological distress among all students, whether migrants or non-migrants. Social self efficacy, however, affect different groups of participants differently. One possible explanation is that for first generation migrants and international students, teacher-student interaction in their home countries could be different from that in Canada and they might not feel confident or comfortable in relating to their teachers in the Canadian way and this might make them feel less satisfied with their academic life. The first generation migrant and international students could choose to socially mix only with other first generation migrant or international students if they do not feel comfortable mixing with the receiving society in their social lives but they have to relate to their teachers in order to succeed academically. The results are consistent with that of Bandura et al. (1996).

The differences between those born outside and in Canada were further highlighted by factor analysis results. Factor analyses results indicated that among first

generation migrants and international students (born outside Canada), social self-efficacy and the cultural identity variables, degree of Canadian identification, and importance of being a Canadian loaded on one factor. For Anglo-Canadians and second generation migrants, social self-efficacy, chance LOC, and others LOC, psychological distress and academic satisfaction loaded on one factor. Degree of Canadian identification, importance of being Canadian and age loaded on the other factor. In the present study, the items measuring social self-efficacy were designed specifically to measure social-self-efficacy in relation to interaction with people in Canadian society, rather than social-self-efficacy in general. It is possible that migrants and international students who chose to identify more with the Canadian society were more familiar with the Canadian culture and were more likely to report a higher sense of social-self-efficacy in relation to their social interactions with people in the Canadian society. Among Anglo-Canadians, social interaction with people in the Canadian society does not require additional effort to learn another culture and are not related to acculturation issues. The factor structure among migrants and international students suggested that in a model on migrant adaptation, social self-efficacy (especially social self-efficacy in relation to members of the receiving society) might be closely related to cultural identity, and is a major acculturation issue.

Psychological adaptation (psychological distress and academic satisfaction), however, was not related to identification with receiving society, age and sex, except among international students, where the older ones were found to report higher levels of distress and academic satisfaction. This group was more heterogeneous in terms of age range, compared with the Anglo-Celtic Canadians and second generation migrants, where 94% of them were between the ages 16 to 20. The findings was contrary to that of Sam

and Berry (1995) who found that older migrant youth reported more problems. However, their participants were teenage adolescents and it was possible that conflict with parents were maximal at this period and they were also going through a period of life transition. Many of the international students in this group were no longer teenagers. The lack of sex difference was inconsistent with the findings of Rosenthal (1984), Sam and Berry (1995) and Crystal et al. (1994). However, in these studies, the participants were high school students, most of whom were likely to be living with at least one of their parents, and in the present study, the participants were post-secondary students, many of whom were living away from home, and the difference in age and living condition might explain the lack of difference.

The results suggest that, in models on migrant adaptation, a sense of control and competence, both personal and interpersonal, is important for adaptation. This is reflected in the variables chance LOC and social self efficacy. There are cultural differences in relation to these two constructs and these two constructs are also predictive of psychological adaptation, in terms of psychological distress and academic satisfaction. Most models on adaptation highlight the importance of social relationship and support and their impact on adaptation. The present study, however, indicates that a subjective sense of interpersonal competence, in addition to the degree of perceived social support, is also important for adaptation. This study also supports the universal functional value of efficacy beliefs (Bandura, 1999). The present study further shows that migrants who are born outside the receiving society are different from those born in the receiving society, not only on various personality variables, but also in terms of the influence of the personality variables on their adaptation. The present study indicates that generational

status is an important variable in models on migrant adaptation. In terms of implications for service provisions, the findings suggest that service providers should be sensitive to the different needs of migrants in terms of their generational status, and that enhancing a sense of personal competence, including social competence, is important in facilitating migrant adaptation.

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Table 1

Description of student samples

Variable	SAMPLE			
	Anglo-Celtic Canadians	Second generation migrants	First generation migrants	International students
N	90	35	40	32
Males	18	7	19	16
Females	72	28	21	16
Age M	19.06	19.89	23.63	23.41
Sd	1.70	4.24	6.38	3.83
Length of Res M	18.98	18.83	6.80	1.65
Sd	1.78	5.5	4.79	1.70
% 1st year student	93.3	91.4	50.0	43.8
Country of Origin of Parents (fathers)	Canada = 77 US = 3 UK = 7 Ireland = 7	Europe = 22 Asia = 7 Other = 6	China = 12 HK = 11 Other Asia = 11 Other = 6	Asia = 17 Africa = 6 Other = 9

Table 2

Mean and standard deviation scores of variables

	Anglo-Celtic Canadians	Second - generation migrants	First generation migrants	International students	All participants	Signific-ance
Chance LOC	16.52 (7.28)	16.89 (5.41)	20.53 (7.64)	20.31 (8.33)	18.02 (7.43)	$p = .001$
Others LOC	15.63 (7.26)	17.37 (6.88)	18.58 (7.94)	19.36 (7.71)	17.14 (7.51)	$p > .05$
Social Self-efficacy Scale for Students	102.92 (14.90)	102.09 (14.50)	96.18 (17.38)	88.75 (16.62)	99.10 (16.39)	$p < .001$
Academic Satisfaction Scale	26.58 (4.36)	27.23 (3.95)	24.95 (4.95)	25.50 (4.81)	26.19 (4.53)	$p < .05$
Perceived Stress Scale	25.74 (7.98)	26.57(6.75)	28.23 (8.30)	26.38 (6.53)	26.50 (7.63)	$p < .05$
Degree of Canadian identification	4.79 (.66)	4.57(.74)	2.85 (1.27) ($n = 39$)	1.38 (.80) ($n = 26$)	3.88 (1.51) ($n = 190$)	N/A
Importance of being Canadian	4.47 (.86)	4.34 (1.06)	3.21 (1.17) ($n = 39$)	2.04 (1.34) ($n = 27$)	3.84 (1.36) ($n = 191$)	N/A

Table 3

Correlation among variables among all participants (n = 197)

	(1)	(2)	(3)	(4)	(5)
Chance LOC (1)					
Others LOC (2)	.60***				
Social Self-efficacy Scale for Students (3)	-.30***	-.38***			
Academic Satisfaction Scale (4)	-.34***	-.38***	.33***		
Perceived Stress Scale (5)	.45***	.41***	-.39***	-.62***	

*** $p < .001$

Table 4

Predictors of academic satisfaction and stress

	Academic satisfaction		Stress	
	β	p	β	p
Social self-efficacy	.21	< .005.	-.29	< .001
Others LOC	-.21	< .05.	.13	N.S.
Chance LOC	-.15	N.S.	.30	< .001
Residential status	-.09	N.S.	.14	N.S.
Place of birth of parents	-.10	N.S.	-.02	N.S.
Place of birth of participants	-.16	N.S.	-.03	N.S.
Stress	N/A.	N/A.	N/A	N/A
Academic satisfaction	N/A	N/A	N/A	N/A

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Table 5

Factor loadings

	First generation migrants and international students		Anglo-Celtic Canadians and second generation migrants	
	Factor 1	Factor 2	Factor 1	Factor 2
Stress	**.83**	.06	**.83**	-.01
Academic satisfaction	**-.83**	.08	**-.69**	-.19
Others LOC	**.68**	-.27	**.73**	-.20
Chance LOC	**.72**	-.10	**.76**	-.03
Age	**-.28**	-.15	.01	**.18**
Social self-efficacy	-.42	**.64**	**-.56**	.37
Degree of Canadian identification	.05	**.90**	-.15	**.86**
Importance of being a Canadian	.03	**.83**	-.06	**.82**

Word count: 6631 words